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MIXED SUSPENDED CEILING COMPRISING A STRETCHED CANVAS

The present invention relates to improvements in suspended (false) ceiling systems constituted by a canvas maintained stretched by peripheral rails, and especially to suspended ceilings employing so-called "invisible" rails of this type.

Suspended ceilings constituted by a canvas, particularly made of polyvinyl chloride, called PVC, which is tightened by its periphery with the aid of a border in the form of a hook which fits on rails fixed on the walls of a room, have been developed for some years. In order to conceal from the user's eyes these rails which usually constitute a sort of frame, it has also been proposed to employ rails of so-called "invisible" type which present the particularity of ensuring hold of the stretched canvas not by fitting means but by placing the free end of the border in simple abutment against a specific rail element provided to that end, this allowing the canvas to be mounted and dismantled particularly easily.

It is known that it is sometimes necessary to carry out technical interventions in the volume included between the suspended ceiling and the ceiling, particularly for example in order to ensure maintenance of lamps. Consequently it is understood that such interventions oblige the user to effect a prior, at least partial dismantling of the stretched ceiling.

Furthermore, it so happens that, in certain types of architectural constructions, it is desired to make suspended ceilings which are provided with accessory elements, such as for example lamps of large dimensions or rails of lamps, air-conditioning outlets, traps for access to the ceiling, etc...

The production of such accessory devices through the stretched canvas presents certain difficulties and the present

invention has for its object to propose means for providing, in a stretched ceiling, the easy production of one or more accessories, particularly of the type of those mentioned hereinabove.

The present invention has for its object to allow a user, on the one hand, to have available accessories, for example of lamp type, conjointly with stretched ceilings and, on the other hand, to have easy and rapid access to the technical volume lying above the suspended ceiling, simply by dismantling a tile adjacent to the latter.

The present invention thus has for its object a suspended ceiling constituted on the one hand by at least one canvas tightened by its periphery on support elements fast with the ceiling and/or the walls of a room, characterized in that it is constituted, on the other hand, by ceiling tiles held by these support elements with the aid of holding means allowing the tiles to be dismantled without first having to fully or partially dismantle the canvas.

In a form of embodiment of the present invention, the support elements will be constituted by rails, namely peripheral rails and median rails which will be held with respect to the ceiling, these latter being provided, on one of their sides, with means for holding the canvas and, on their other side, with means for holding the tiles.

In simple manner, the tiles will be held in simple abutment, at least in part, on the median rails. As for these median rails, they will be provided on one of their sides with means for hooking the canvas, and, on their other side, with a horizontal web intended to receive the tiles.

The hooking means of the median rail will preferably be constituted by two parallel vertical flanges, namely a first flange disposed towards the canvas, and a second flange disposed towards the tiles, the inner wall of the second flange being provided with a shoulder adapted to receive, in

simple abutment, the free end of a border integral with the canvas, so as to ensure holding of the latter stretched. The shoulder will preferably be disposed on the lower part of the second flange.

A form of embodiment of the present invention will be described hereinafter by way of non-limiting example, with reference to the accompanying drawings, in which:

Figure 1 is a view in perspective and in partial section of a mixed ceiling according to the invention.

Figure 2 is a view in cross section of a profiled element for producing the ceiling according to the invention.

Figure 3 is a view in cross section of a variant embodiment of a profiled element for making the ceiling according to the invention.

Figure 4 is a plan view from above of the construction shown in Figure 3.

Figure 5 is a view in cross section of another variant embodiment of a profiled element for making the ceiling according to the invention.

The suspended ceiling according to the invention is essentially constituted by two elements, namely a canvas 4 and rigid tiles 5. Hold of these elements is ensured by metal rails, namely peripheral rails fast with the walls (not shown in the drawing), and median rails 1 which ensure, on one of their sides, hold of the canvas 4 and on their other side hold of the tiles 5.

Figure 2 shows a median rail 1 which is constituted by an extruded metal section, essentially composed of a first vertical flange 9 and a second parallel flange 11 of the same length, which is maintained spaced apart therefrom by a transverse web 10. This transverse web 10 extends beyond the first flange 9 by a support zone 13.

Furthermore, the lower part of the flange 11 extends towards the outside (i.e. in a direction opposite to the first

flange 9), in a web 15 perpendicular to the flanges 9 and 11 and which is intended to ensure hold of the tiles 5.

The web 15 extends inwardly, i.e. beyond the inner face 11a of the second flange 11, in the direction of the first flange 9 over a short length, in a shoulder 17.

The rail 1 is held at a given distance from the ceiling (not shown in the drawing) of the room by tie rods 3 of which one end is connected to the latter, and the other end is fixed to the rail via brackets 19.

If the ceiling comprises more than one row of tiles 5, there is employed a second rail 2 of cross section in the form of an inverted T and whose central arm is maintained at a given distance from the ceiling by tie rods 3'. The distance E existing between the central arm of the second T-shaped rail 2 and the second flange 11 of the first rail 1 is a function of the width of the tiles that it is desired to dispose in the vicinity of the stretched canvas 4.

In the form of embodiment shown in Figure 1, certain of the tiles 5 ensure the hold of openings 6 for aeration.

In known manner, the stretched canvas 4 is provided, on its periphery, with a holding element, or border 25, which is constituted by a band of elastomer on which the canvas 4 is welded and of which the free end part rests in simple abutment on the shoulder 17, i.e. it does not undergo any fit thereon and its fixation is ensured by the very tension of the canvas, which is a known mode of fixation, presenting in particular the following advantages:

- aesthetic characteristics
- discretion
- great facility of positioning and dismantling.

However, it would, of course, be possible, according to the invention, to ensure fixation of the canvas 4 on the rail 1 by any other means of fixation and in particular, as shown in Figure 5, by a rail of type with fit, i.e. a rail in which

a border 25' fits on the section, and this without the canvas 4 concealing the rail from the users' eyes, as is the case of the rail according to Figure 2.

The fixation of the tie rods 3 on the rail 1 may, of course, be ensured by means other than brackets, as shown in Figures 3 to 5.

In the latter, the upper part of the rail 1 is constituted by a web 10' disposed in line with the web 10, on the canvas 4 side and of which the two ends terminate in two small flanges 28 parallel to the principal flanges 9 and 11 which close at their upper part by a border 31, so as to constitute a slideway 29. This slideway 29 may receive a plate 30 in the form of a parallelogram of which the width $\underline{e}_1$ is smaller than the longitudinal opening of width $\underline{e}_2$ separating the two borders 31, so as to be able to introduce it in the rail 1, and of which the distance $\underline{f}_1$ separating the other two sides of the parallelogram is equal to the internal spacing $\underline{f}_2$ of the two lateral flanges 28.

Under these conditions, it will be understood that, in order to ensure hold of the rail, it suffices to introduce the plate 30 in the slideway 29, then to pivot it about an axis of the tie-rod 3, in order to bring it into a position as shown in dotted lines in Figure 4.

The present invention is particularly advantageous in that it makes it possible to constitute a mixed ceiling, i.e. a ceiling which is formed, over a part of its surface, by a stretched canvas, adjoining one or more other parts reserved for technical elements, such as for example openings for aeration, for air-conditioning, rails of lamps, or simply tiles, for example sound-insulating ones.